Precautionary Measures for Residential Rainwater Catchment Users During Volcanic Activity

Residential rainwater catchments are not regulated as public drinking water supplies and there is no government agency oversight of these systems in Hawaii. Homeowners and users are responsible for their maintenance, proper usage and for monitoring their own water quality. While the Department of Health does not recommend drinking or cooking with water from residential rainwater catchment systems, we realize that for various reasons, many individuals choose to do so.

Recent activity at Kilauea volcano has raised concerns about the possible impacts to rainwater catchment systems on the island of Hawaii. As the ash has been found to contain various metals, catchment users should try to avoid accumulating it in their water tanks. We have summarized the various recommendations made thus far, to help protect the users of these systems located downwind of volcanic activity.

DURING VOLCANIC ACTIVITY

- Temporarily disconnect the gutters feeding into the tank.
- Do not reconnect the system until the ash and debris are washed off of the roof and out of the gutters.
- Place a free-standing or self-supporting canopy to cover mesh tank covers so that less debris will get in.
- Obtain water from the County of Hawaii's emergency spigots.

In addition to the above special precautions, remember to routinely perform the three P's for residential rainwater catchment systems:

PREVENT CONTAMINATION OF YOUR WATER THROUGH FREQUENT AND PROPER MAINTENANCE.

- Remove any dirt, debris, or other litter from your roof, gutters, or inside your water tank.
- Trim or remove any plants or trees that overhang your home.
- Make sure that your water tank cover and vent screens are secure and not broken or cracked.
- Frequently check your sediment filters, clean the filter housing and replace dirty filters.
- Use nonmetal plumbing materials and fixtures that are certified against ANSI/NSF Standard 60, to reduce the levels of metals that can be leached out by acidic catchment water.
- Use first flush diverters to help reduce the amount of debris entering the tank.

PROTECT YOURSELF FROM HARMFUL CONTAMINANTS BY TREATING YOUR WATER.

- Carefully read and follow the water treatment device manufacturer's instructions or operating manual for correct installation, operation, and maintenance.
- Disinfection (Chlorine or Ultraviolet) is strongly recommended for catchment water supplies. A suggested starting point would be to add 2-1/2 tablespoons of unscented 5% household bleach per 1,000 gallons of water in the tank, mix thoroughly, measure free chlorine residual, and repeat the dosing/mixing/measuring process until there is about 0.5 milligrams per liter of free chlorine in the tank. Perform as often as needed to maintain that level.
- If you have an Ultraviolet (UV) disinfection system, regularly wipe down the light bulb to remove any mineral buildup. Check the light bulb to make sure that it is working properly and replace bulbs as recommended by the manufacturer.
- Wherever possible do not add anything to your water supply that is not food grade quality or certified in accordance with ANSI/NSF Standard 60 for drinking water applications.

PROVE THE EFFECTIVENESS OF YOUR PREVENTION AND PROTECTION EFFORTS THROUGH PERIODIC TESTING.

- Testing is the only way to verify if your catchment treatment and maintenance is working.
- Bacteria test kits for detecting fecal contamination are available from the College of Tropical Agriculture and Human Resources (CTAHR) Hilo extension office (see the next section).
- Chlorine test strips are simple to use and also readily available through CTAHR and others. This helps those who regularly disinfect with unscented chlorine bleach or calcium hypochlorite.
- pH test strips are also simple to use and also readily available through CTAHR and others. This helps those who try to adjust the pH and alkalinity of acidic rain by adding baking soda.
- CAUTION - Test kits do not replace testing by a laboratory certified for testing specific drinking water contaminants. Kits for lead and other contaminants can be found in local hardware stores and can be used as a screening tool to determine if a larger problem may exist requiring more accurate testing by a certified lab. However, kits are not available for all contaminants and they may not be sensitive, accurate, or reliable enough to compare their results against known drinking water standards. Certified labs may be found in the phone book or at the DOH web address shown below.
- The Department of Health Safe Drinking Water Branch currently subsidizes the testing for lead and copper in individual homes served by rainwater catchment systems. Owners or users of rainwater catchment systems can use the program once per year. The owner or tenant must pay for the shipping of the water sample and $25 for the analyses. The State will be billed for the remaining cost of the analyses. Under this program, the owner or user of a "legal dwelling" can submit a water sample from their rainwater catchment system to a participating analytical laboratory for testing of lead and copper in the water. **AECOS Laboratory, Inc**. is currently an approved participating laboratory.

Where to Get More Information

- The University of Hawaii, College of Tropical Agriculture and Human Resources published the "Guidelines on Rainwater Catchment Systems for Hawaii." The guidelines are available at http://www.ctahr.hawaii.edu/oc/freepubs/pdf/rm-12.pdf or by mail through the CTAHR Hilo Extension Office (808) 981-5199. CTAHR also offers the test kits discussed above.
- The Hawaii Rainwater Catchment Association provides useful information on its website, http://www.hawaiirain.org and offers practical workshops and other helpful links.
- The Department of Health maintains a listing of certified or approved laboratories that conduct testing of water samples at http://hawaii.gov/health/environmental/water/sdwb/sdwb/pdf/Testing%20Labs.pdf

- If you have any questions, call the Safe Drinking Water Branch at (808) 586-4258.

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